

Checkpoint IV: First Prototype

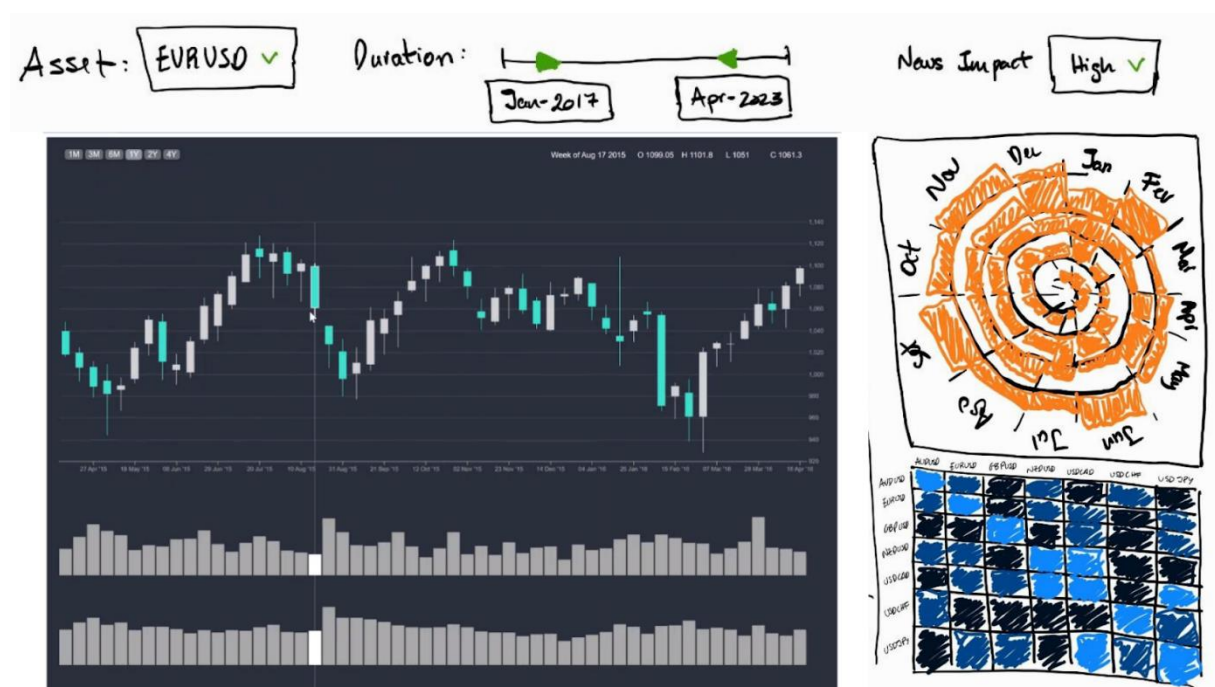
Group: G13

Date: 2023/10/15

Layout

For this milestone, we have developed a candlestick chart illustrating the price variations of individual currency assets over time. This is complemented by a bar chart detailing the trading volume corresponding to each timestamp. The intended final layout can be visualized in the accompanying image. It's worth noting that only the candlestick, volume bar chart and log-returns bar chart were actualized using D3.js; the remaining elements are currently in the conceptual stage.

Below is an image of the current project and the missing idioms still in conceptual stage:



Visual Encoding and Interactivity

Our initial objective was to develop bar charts and a heatmap representing the correlation matrix. However, as these visual representations function independently of one another, we opted to integrate the bar charts with the candlestick chart due to their shared temporal context.

The candlestick chart delineates the open, high, low, and close prices of a security over a given duration. The candle's body represents the difference between the open and close prices, while the wicks signify the high and low prices. Such charts are instrumental in pinpointing trends and discerning patterns within price movements. In our visualization, bar charts were selected to depict the trading volume (expressed in the respective currency, e.g., "12.34 million dollars traded in a single day") and the logarithmic returns.

Logarithmic returns, or log returns, gauge the percentage variation in a security's price over a timeframe. This is computed by taking the natural logarithm of the current price divided by the preceding price. Log returns offer a standardized metric to juxtapose the performance of distinct securities over diverse periods.

By employing these visual elements, we can meticulously scrutinize price trends, juxtapose trading volumes, and evaluate an asset's performance trajectory over time.

Implementation of Linking Mechanism

As alluded to earlier, both visual representations are connected by their temporal context. The interactivity between them is manifested by a vertical line that emerges when hovering over the charts. This line accentuates the specific candlestick, as well as the volume and logarithmic return bars, corresponding to the day under the cursor's focus.

